PRO BOAT

©2010 Pro Boat is an exclusive brand of Horizon Hobby, Inc.

Horizon Hobby, Inc.,
4105 Fieldstone Road
Champaign, IL 61822
USA

Horizon Hobby UK
Units 1-4 Ployters Rd
Staple Tye
Harlow, Essex
CM18 7NS
United Kingdom

Horizon Hobby Deutschland GmbH
Hamburger Strasse 10
25335 Elmshorn
Germany

The Spektrum trademark is used with permission of Bachmann Industries, Inc.

US Patent 7, 391, 320

Printed 12/09

17593

PRO BOAT

Pistol-Grip 2.4GHz Transmitter Instruction Manual

Table of Contents

Introduction 3

Identifying Controls, Dials and Switches 3

Installing the Batteries 4

Receiver Compatibility 4

Binding a Receiver 5

Failsafe 5

Servo Reversing 5

Travel Adjust 6

Steering Trim 6

Throttle Trim 7

Steering Rate 7

General Notes 8

Tips on Using 2.4GHz Systems 8

Warranty Information 10

FCC Information 14

Antenna Separation Distance 14

Compliance Information for the European Union 15

Introduction

The Pro Boat® pistol-grip transmitter incorporates Spektrum™ Marine 2.4GHz technology offering a bulletproof radio link that's immune to internal (noisy motors/ESCs, etc.) and external interfering sources. No longer will you have to wait for a frequency or worry about someone else being on the same channel.

Identifying Controls, Dials and Switches

Installing the Batteries

The PRB8060 radio system requires 4 AA alkaline batteries for operation. Many drivers prefer alkaline batteries over rechargeable batteries finding it more convenient to simply replace the batteries when depleted rather than taking the time to recharge.

To install the batteries:

Remove the battery door and install 4 AA batteries observing the polarity marked in the battery compartment.

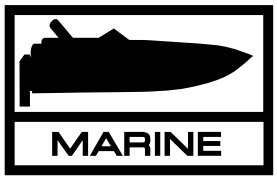
Replace the battery door.

Receiver Compatibility

The Pro Boat pistol-grip transmitter features Marine technology and is compatible with Spektrum marine receivers.

Note: The Pro Boat pistol-grip transmitter is not compatible with Spektrum DSM or DSM2 surface receivers.

Marine-compatible transmitters can be identified by the following logo on the back.



Binding a Receiver

1. With the receiver off insert the bind plug into the bind (BD) port on the receiver.
2. Power the receiver through any other port. The amber LED will flash continuously, indicating the receiver is in bind mode.

   Note: To bind a boat with an electronic speed controller that powers the receiver through the throttle channel (ESC/BEC), insert the bind plug into the BD port in the receiver and the throttle lead into the throttle (TH) port.

3. With the steering wheel and throttle trigger in the desired preset failsafe positions, turn on the transmitter. The LED on the back of the transmitter with a translucent cover will flash indicating the transmitter is in bind mode.

4. Within 15 seconds, the LED on the receiver will go solid indicating a successful bind has taken place.
5. Remove the bind plug and store it in a convenient place.

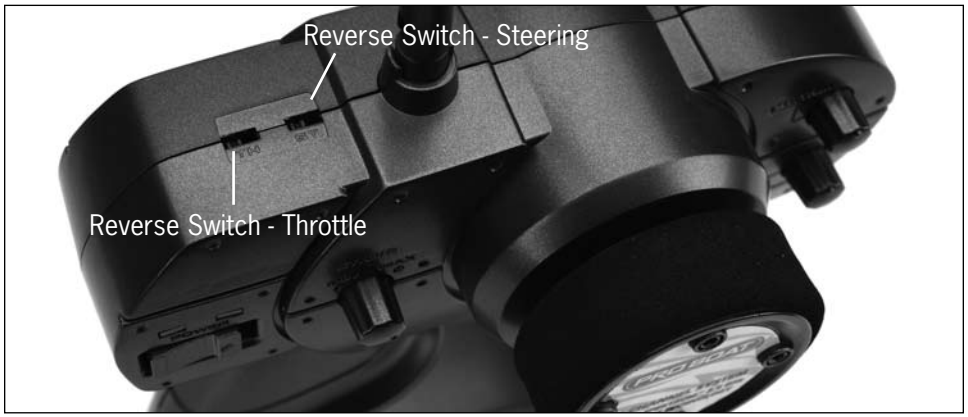
   Note: You must rebind when different failsafe positions are desired, e.g. when throttle or steering reversing has been changed.

Failsafe

Failsafe servo positions are also set during binding. In the unlikely event that the radio link is lost during use, the receiver will drive the servos to their preprogrammed failsafe positions (normally neutral and straight steering). If the receiver is turned on prior to turning on the transmitter, (no transmitter signal is present), all channels have no output, to avoid operating or arming the electronic speed control. When the transmitter is turned on, normal control is resumed.

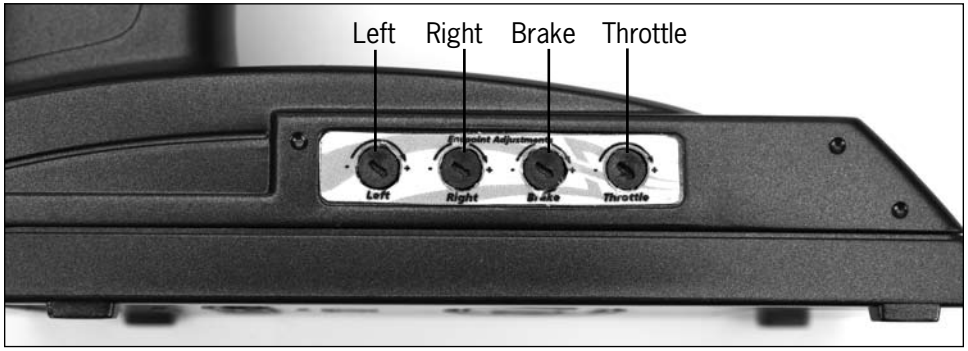
Servo Reversing

Servo reversing is used to reverse the direction of the output of each channel. (e.g., a right steering command results in the wheels turning right). To reverse a channel, switch the position of the correlating switch. The small screwdriver tool included with your transmitter can be used to move the switch if necessary.



Travel Adjust

Travel adjust is used to limit the maximum travel that each channel travels in each direction. Travel adjust is independently adjustable in each direction. To reduce the maximum travel in each direction, use the small screwdriver to rotate the corresponding travel adjust dial counterclockwise. To increase travel in each direction, rotate the corresponding dial clockwise.



Steering Trim

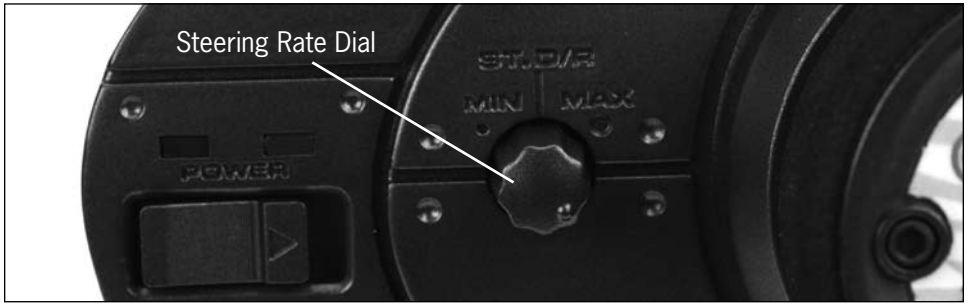
The steering trim dial is used to adjust the steering trim when the wheel is centered. Rotating the dial causes the steering trim (the steering at rest position) to be changed. Normally steering trim is adjusted until the boat tracks straight.

Throttle Trim

The throttle trim dial is used to adjust the throttle trim when the throttle stick is released (neutral position). Rotating the dial causes the throttle trim (the throttle position at rest) to be changed.

Steering Rate

Steering rate (also known as dual rate) allows on-the-fly steering travel adjustments to be made using the steering rate dial. Steering rate limits the amount of travel of the steering servo. The steering rate cannot be greater than 100% and will never exceed the amount of steering travel set with the travel adjust dials.



General Notes

Radio controlled models are a great source of pleasure. Unfortunately, they can also pose a potential hazard if not operated and maintained properly. It is imperative to install your radio control system correctly. Additionally, your level of operating competency must be high enough to ensure you are able to control your model under all conditions. If you are a newcomer to radio controlled models, please seek help from an experienced modeler or your local hobby shop.

Safety Points to Obey for Modelers

- Ensure your batteries (both transmitter and receiver) have been properly charged for your model.
- Check all servos and their connections prior to each run.
- Do not operate your model near spectators, parking areas or any other area that could result in injury to people or damage of property.
- Do not operate your model during adverse weather conditions. Poor visibility can cause disorientation and loss of control of your model.
- Do not point the transmitter antenna directly toward the model. The radiation pattern from the tip of the antenna is inherently low.
- Do not take chances. If at any time during the operation of your model you observe any erratic or abnormal operation, immediately stop operation of your model until the cause of the problem has been ascertained and corrected. Safety can never be taken lightly.

Tips on Using 2.4GHz Systems

Your Spektrum Marine equipped 2.4GHz system is intuitive to operate, functioning nearly identically to FM systems. Following are a few common questions from customers.

1. Q: Which do I turn on first, the transmitter or the receiver?

   A: It doesn't matter, although it is suggested to turn the transmitter on first. If the receiver is turned on first, all channels will be driven to the failsafe position set during binding. When the transmitter is then turned on the transmitter scans the 2.4GHz band and acquires two open channels. Then the receiver that was previously bound to the transmitter scans the band and finds the GUID (Globally Unique Identifier code) stored during binding. The system then connects and operates normally. If the transmitter is turned on first, the transmitter scans the 2.4GHz band and acquires two open channels. When the receiver is turned on, the receiver scans the 2.4GHz band looking for the previously stored GUID. When it locates the specific GUID code and confirms uncorrupted repeatable packet information, the system connects and normal operation takes place. Typically this takes 2 to 6 seconds.

2. Q: Sometimes the system takes longer to connect and sometimes it doesn't connect at all. Why?

   A. In order for the system to connect (after the receiver is bound), the receiver must receive a large number of continuous (one after the other) uninterrupted perfect packets from the transmitter. This process is purposely critical of the environment ensuring that it's safe to fly when the system does connect. If the transmitter is too close to the receiver (less than 4 feet) or if the transmitter is located near metal objects (inside or around a pit trailer, metal transmitter case, the bed of a truck, the top of a metal work bench, etc.) connection will take longer. In some cases connection will not occur as the system is receiving reflected 2.4GHz energy from itself and is interpreting this as unfriendly noise. Moving the system away from metal objects or moving the transmitter away from the receiver and powering the system up again will cause a connection to occur. This only happens during the initial connection. Once connected the system is locked, and should a loss of signal occur (failsafe), the system connects immediately (4ms) when signal is regained.

3. Q: I've heard that the Spektrum system is less tolerant of low voltage. Is this correct?

   A: All Spektrum receivers have an operational voltage range of 3.5 to 9 volts. With most systems this is not a problem as in fact most servos cease to operate at around 3.8 volts. When using multiple high-current draw servos with a single or inadequate battery/power source, heavy momentary loads can cause the voltage to dip below this 3.5-volt threshold causing the entire system (servos and receiver) to brown out. When the voltage drops below the low voltage threshold (3.5 volts), the receiver must reboot (go through the start up process of scanning the band and finding the transmitter) and this can take several seconds.

4. Q: Sometimes my receiver loses its bind and won't connect, requiring rebinding. What happens if the bind is lost in use?

   A: The receiver will never lose its bind unless it's instructed to. It's important to understand that during the binding process the receiver not only learns the GUID (code) of the transmitter but the transmitter learns and stores the type of receiver that it's bound to.

5. If the system fails to connect, the following more than likely may have occurred:

   - The transmitter is near conductive material (transmitter case, truck bed, etc.) and the reflected 2.4GHz energy is preventing the system from connecting. (See #2 on this page)

Warranty Information

Warranty Period

Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warranties that the Products purchased (the "Product") will be free from defects in materials and workmanship for a period of 1 year from the date of purchase by the Purchaser.

1-Year Limited Warranty

Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this Product immediately in new and unused condition to the place of purchase.

Law: These Terms are governed by Illinois law (without regard to conflict of law principals).

Safety Precautions

This is a sophisticated hobby Product and not a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the Product or other property. This Product is not intended for use by children without direct adult supervision. The Product manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or injury.

Questions, Assistance, and Repairs

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a Product Support representative.

Inspection or Repairs

If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. A Service Repair Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by warranty the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair

you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. Please note: non-warranty repair is only available on electronics and model engines.

United States

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822
USA

All other Products requiring warranty inspection or repair should be shipped to the following address:

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822
USA

Please call 877-504-0233 or e-mail us at productsupport@horizonhobby.com with any questions or concerns regarding this product or warranty.

United Kingdom

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Hobby UK
Units 1-4 Ployters Rd
Staple Tye
Harlow, Essex
CM18 7NS
United Kingdom

Please call +44 (0) 1279 641 097 or e-mail us at sales@horizonhobby.co.uk with any questions or concerns regarding this product or warranty.

Germany

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Technischer Service
Hamburger Strasse 10
25335 Elmshorn
Germany

Please call +49 4121 46199 66 or e-mail us at service@horizonhobby.de with any questions or concerns regarding this product or warranty.

FCC Information

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

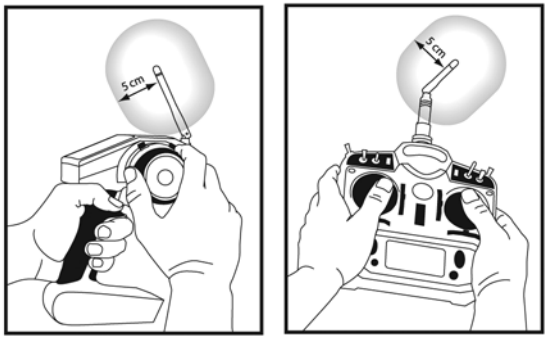
Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.

Antenna Separation Distance

When operating your transmitter, please be sure to maintain a separation distance of at least 5 cm between your body (excluding fingers, hands, wrists, ankles and feet) and the antenna to meet RF exposure safety requirements as determined by FCC regulations.

The illustrations below show the approximate 5 cm RF exposure area and typical hand placement when operating your Spektrum transmitter.



Compliance Information for the European Union

The associated regulatory agencies of the following countries recognize the noted certifications for this product as authorized for sale and use.

AT	BG	CZ	CY	DE
DK	ES	FI	FR	GR
HU	IE	IT	LT	LU
LV	MT	NL	PL	PT
RO	SE	SI	SK	UK

Instructions for Disposal of WEEE by Users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

Declaration of Conformity

(in accordance with ISO/IEC 17050-1)

No. HH20100103

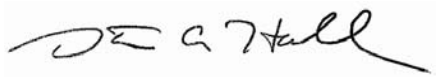
Product(s): PRB 2.4GHz Transmitter
Item Number(s): PRB8060

Equipment class: 2

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC:

EN 300-328	Technical requirements for Radio equipment.
EN 301 489-1, 301 489-17	General EMC requirements
EN 60950	Safety

Signed for and on behalf of:
Horizon Hobby, Inc.
Champaign, IL USA
Jan 03, 2010



Steven A. Hall
Vice President
International Operations and
Risk Management
Horizon Hobby, Inc.